**Light Reflection and Refraction using PhET**

<https://phet.colorado.edu/en/simulation/bending-light>

Today, you will use the Bending Light PhET simulation. The goal of this lab is to understand *how* light is reflected and refracted.

**PreLab –**

1. Draw a picture of a light ray passing from one medium to another. Label – refracted ray, refracted angle, incident ray, incident angle, normal line. (5 points)

2. Write Snell’s Law and identify each variable and its units. (4 points)

3. What do you think the relationship is between the bending of light as it passes through a medium and the medium’s refractive index? (2 points)

**Part 1 – Qualitative Observations**

1. What happens to the reflected and refracted rays as you change the angle of the incident light beam? (2 points)

2. What does changing the index of refraction do to the refracted and reflected light? (2 points)

**Part 2 – Quantitative Observations**

You will develop your own experiment to investigate the following relationships.

1. Find a relationship relating the angle of the incident light and reflected light. Include any data you collect and a short conclusion. (5 points)

2. Find a relationship relating the angle of the incident beam to the angle of the refracted beam. Your task is to develop a method that confirms Snell’s Law. (20 points)

Your summary should include

* a description (2-3 paragraphs) of the process you went through. You should use proper vocabulary discussed in class.
* any data you collect
* a conclusion that connects your data to Snell’s Law